

# NUTRITION AND FOOD SCIENCES

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## Food supplementation against Acute and Chronic Lung Disease

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**Background:** Acute and chronic lung diseases are caused by inflammation in the lungs. Both acute and chronic have in common the involvement of inflammatory pathways and endogenous oxidative stress alteration. Glucocorticosteroids are often used, but specific nutrients have been proposed to positively affect disease progression. One of the foods that has been attracting the attention of researchers in recent years is Acai seeds. Acai Berry is a berry with various nutritional properties such as antioxidants, unsaturated fats (omega-3, omega-6 and omega-9), vitamins, minerals such as iron and calcium, that make it a fruit hypocholesterolemic, immunostimulant and antioxidant.

**Objective:** Our work is oriented towards the study of the other possible properties of the Açai Seeds, in particular on its particular antioxidant activity and on its potential effects in the prevention of diseases caused by oxidative stress. With this background in our mind, in this work we tested for the first time the beneficial effects on Açai Seeds assumption in an acute and chronic model of lung inflammation.

**Methods:** Acute lung injury was induced with an injection containing 2%  $\lambda$  carrageenan (0.1 ml) into the pleural cavity. Chronic lung injury was induced with bleomycin sulphate (1mg/kg body weight) delivered by a single intratracheal administration. In both experimental models Acai seeds were administered orally at the dose of 500 mg/kg.

**Results:** Our results demonstrated for the first time that Açai seeds administration was able to reduce lung alteration, inflammation and cytokine release in both experimental models. Açai seeds administration additionally improved physiological anti-oxidant system by the increase of Nrf2 expression.

**Conclusion:** This study suggests that Açai seeds administration would be helpful to reduce acute and chronic lung disease.

**Keywords:** oxidative stress, inflammation, lung disease, Açai seeds.

### Biography:

Marika Cordaro graduated in biology at the University of Messina in 2015. She has completed her PhD in "Applied Biology and Experimental Medicine" at University of Messina, Italy in the year 2017. She is a researcher in physiology, with particular interest in cell physiology and molecular mechanism underlying inflammation. In particular, Dr Cordaro, during her research activity, produced about 120 articles that attest a diffuse interest in the field of inflammation and oxidative stress neurological disorder-related. Her research is involved in preclinical studies for the discovery of physiological cellular response that could be used as new potential therapeutic targets. Dr. Cordaro has knowledge about animal research, behavioral alterations, biochemical and molecular biology and immunohistochemical analysis.

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